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now in press, will be withdrawn. The identity of *Dactylopius vastator* with *D. filamentosus* was lately discovered by Professor J. D. Tinsley, who is about to publish an article on the subject. *Euphoria longana*, the plant on which *Diaspis euphorie* was found, is properly a Nephelium.

T. D. A. COCKERELL.

The Corpora allata of the Orthoptera. — Heymons describes (*Sitzber. Preuss. Akad. Wiss.*, 1899, Nr. 30) two small bodies, the corpora allata, lying immediately above the œsophagus in the head of *Bacillus rossii*. At first sight they appear as if they were a second pair of pharyngeal ganglia of the sympathetic system, as they lie immediately above the paired visceral nerves. Sections, however, show that, while they lie on these nerves, they are non-nervous in structure. They are vesicular in nature, composed of a single layer of columnar epithelium, the cavity of the vesicle being filled by a stratified chitine, apparently molted by the epithelium. In development these corpora arise as ectodermal ingrowths from the ventral surface, on the boundary between the mandibular and maxillary segments. From these ingrowths a pair of small cell masses, at first solid, bud off and gradually pass dorsally to the definitive position. Concerning the function of these structures, which have been seen in Hymenoptera and other forms by other students, Heymons has little definite to offer. Experiments by extirpation of the structures from living insects showed that they apparently are not organs of equilibration, while the absence of sensory hairs would seem to suggest that they are not sensory in structure. The absence of ducts and of concrements and excretory granules in the protoplasm would militate against a glandular nature. The suggestion is made that they were originally peripheral organs and that, with their migration to an internal position, they have lost their primitive significance.

Systematic Position of the Fleas. — Dr. Heymons, in a short paper (*Zool. Anz.*, Bd. XXII, p. 223), gives his opinions upon this mooted question. He claims that Kräpelin's views of the homologies of the mouth parts are erroneous, there existing in all stages a labrum, and a pair each of mandibles and maxillæ, the latter with palpi and a labium. The wounds produced by these animals are not caused by the upper lip, but by the mandibles which are worked by two protractors and two retractors. Anatomical structure goes to show that these forms are to be regarded as forming a distinct order (Siphonaptera), and that Puliciphora, often considered as an annectent form

on the dipteran side, is a true fly of the family Phoridae, without any siphonapteran affinities.

The Sting of the Hymenoptera. — Zander has studied the structure of the sting in sixty-two hymenopterous insects and, among other conclusions (*Zeit. wiss. Zool.*, Bd. LXVI, p. 289), comes to the support of the views of Heider, Heymons, and Kulagin, that the elements of the sting (*i.e.*, the gonapophyses) are not homologous with the other appendages. This conclusion is based on the fact not only that these structures arise much later than the abdominal legs, but that they arise in a position nearer the middle line than do the transient abdominal limbs.

Nematodes. — Dr. O. von Linstow¹ has just published the results of his studies on the parasitic nematodes of the Berlin Zoölogical Collection. The paper is altogether the most extensive contribution to this much neglected and little known group that has appeared in recent years. It includes descriptions of forty-nine species, of which thirty-eight are new to science. Among them the genus *Ascaris* was represented by twelve species, and *Filaria* by nine, while the other species were distributed through numerous genera, two of which, however, were entirely new. These forms were collected from every continent except North America and were taken from hosts in every group of vertebrates.

Among items of general interest was noted the abundant occurrence in fish of ascarid larvæ, often of considerable size, whereas *Ascaris lumbricoides*, the human round worm, of which the life history is known, undergoes direct development, *i.e.*, has no intermediate host.

A striking form is the new genus *Pterocephalus* from the intestine of the zebra in east Africa. The head of the adult parasite bears six conical spines, six hooks, and six deeply serrated leaf-like appendages which are attached only at their constricted bases. While the hooks and spines are directed antieriad, these appendages lie prone and reversed; when, however, the mouth opening is drawn in and the spines and hooks inverted and concealed, the appendages are turned antieriad and project from the anterior margin of the head curiously like wings, hence the generic name. These structures are wanting or only faintly indicated in the immature forms.

Spiroptera (an *Filaria*) *bicolor*, previously reported by von Linstow

¹ Linstow, O. von. Nematoden aus der Berliner Zoologischen Sammlung, *Mitth. a. d. Zool. Samml. d. Mus. f. Naturk. Berlin*, Bd. i, Hft. 2 (1899), 28 pp., 6 pls.